

REMARKS

This Response is submitted in response to the final Office Action mailed on November 18, 2010. No fee is due in connection with this Response. The Director is authorized to charge any fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-00478 on the account statement.

Claims 11, 14-16, 18-21 and 25-31 are pending in this application. Claims 1-10, 12-13, 17 and 22-24 were previously canceled without prejudice or disclaimer, and Claims 27-31 were withdrawn from consideration by the Patent Office. In the Office Action, Claims 11, 14-16, 18-21 and 26 are rejected under 35 U.S.C. §103. For at least the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 11, 14-16, 18-21 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,143,083 to Yonemitsu et al. (“*Yonemitsu*”) in view of U.S. Patent No. 5,259,881 to Edwards et al. (“*Edwards*”), U.S. Patent No. 4,492,180 to Martin (“*Martin*”) and U.S. Patent Publication No. 2001/0006827 A1 to Yamazaki et al. (“*Yamazaki*”). For at least the reasons set forth below, Applicants respectfully submit that, even if combinable, *Yonemitsu*, *Edwards*, *Martin* and *Yamazaki* fail to disclose or render obvious every element of independent Claim 11 and Claims 14-16, 18-21 and 26 that depend therefrom.

Independent Claim 11 recites, in part, an apparatus for manufacturing an organic electroluminescence display, the apparatus comprising: a first alignment mechanism for aligning a mask, having openings corresponding to the predetermined pattern, to the substrate and for detachably attaching the mask and the substrate; a first formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a first color position with the substrate attached to the mask; a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask again; and a second formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a second color position with the substrate attached to the mask, wherein each of the vacuum processing chambers correspond to each of the organic material layers, and wherein the second alignment mechanism is provided to connect the first formation unit and the second formation unit in series thereby providing flow-through processing.

By forming the organic material layers for each formation unit sequentially in a state with the substrate and the mask attached, realignment is not needed during the formation of the organic material layers for a single organic layer. See, Specification, page 2, paragraphs 17-18; pages 5-6, paragraphs 77-91. This greatly reduces the waiting time for heating the vapor deposition sources, reduces equipment costs and decreases the amount of organic materials consumed in forming the organic layers. See, Specification, page 1, paragraph 13; page 8, paragraph 136; page 9, paragraphs 137-38. In contrast, even if combinable, the cited references fail to disclose every element of the present claims.

For example, even if combinable, the cited references fail to disclose a plurality of vacuum processing chambers for sequentially forming the organic material layers on the substrate at a single color position with the substrate attached to the mask as recited, in part, by independent Claim 11. The Patent Office asserts that *Yonemitsu* teaches first and second film formation units each including a plurality of vacuum processing chambers for sequentially forming a plurality of layers. See, Office Action, page 3, lines 5-12. However, *Yonemitsu* merely discloses a plurality of reaction chambers 70 for the deposition of various films on a semiconductor wafer. See, *Yonemitsu*, column 11, lines 23-44. Nowhere does *Yonemitsu* teach or suggest the use of a mask for sequentially forming organic material layers at a single color position. In fact, because *Yonemitsu* is entirely directed to a substrate processing apparatus for processing a semiconductor wafer, one of ordinary skill in the art would understand that a mask would not be used when depositing films in the reaction chambers 70. See, *Yonemitsu*, column 1, lines 10-12; column 2, lines 10-12. As such, *Yonemitsu* fails to disclose or suggest that its reaction chambers 70 are capable of sequentially forming a plurality of organic material layers at a single color position with the substrate attached to the mask.

The Patent Office relies on *Edwards* merely for the disclosure of two processing apparatuses connected by an alignment chamber. See, Office Action, page 4, lines 1-2. Like *Yonemitsu*, *Edwards* merely describes a semiconductor wafer processing apparatus and fails to disclose forming a plurality of organic material layers using a mask. See, *Edwards*, column 1, lines 5-9; column 3, lines 7-13. The Patent Office relies on *Martin* for the disclosure of an alignment means for aligning a mask to a substrate and detachably attaching the mask and the substrate. See, Office Action, page 4, lines 3-8. Although *Martin* teaches an apparatus for aligning a mask with a substrate, nowhere does *Martin* suggest forming organic material layers in a plurality of vacuum processing chambers with the substrate attached to the mask. See,

Martin, Abstract; column 1, lines 9-19; column 2, lines 46-50. Instead, *Martin* teaches an apparatus for indexing a deposition mask to a substrate at a single working station where vapor deposition occurs. See, *Martin*, column 3, lines 7-26; column 4, lines 18-52. Therefore, even if combinable, the cited references fail to disclose or even suggest a plurality of vacuum processing chambers for sequentially forming a plurality of organic material layers at a single color position with the substrate attached to the mask in accordance with the present claims.

Moreover, even if combinable, the cited references fail to disclose or suggest a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask, wherein the second alignment mechanism is provided to connect the first formation unit and the second formation unit in series as required, in part, by independent Claim 11. The Patent Office admits that *Yonemitsu* fails to disclose an alignment mechanism for aligning a mask to a substrate and connecting the film formation units. See, Office Action, page 3, lines 13-17. Nevertheless, the Patent Office asserts that *Edwards* teaches connecting two processing apparatuses by an alignment chamber, and “[t]he motivation for connecting the first, second and third film formation units of *Yonemitsu* et al with alignment chambers is to align the chambers and enable the substrate to be passed between each film formation unit[] as taught by *Edwards* et al.” See, Office Action, page 4, lines 1-2 and 13-15. However, *Edwards* merely discloses that its aligner 16 aligns modules of a semiconductor wafer processing apparatus. See, *Edwards*, column 6, lines 40-42. Nowhere does *Edwards* teach or suggest that its alignment chamber connecting modules 12 and 14 may be used to align a mask with a substrate. *Martin* merely describes a carriage assembly which aligns a substrate 64 with one of a plurality of masks 30 and 32. See, *Martin*, column 10, lines 16-40; Fig. 3. Nowhere does *Martin* teach or suggest that its carriage assembly connects first and second film formation units, nor does the Patent Office cite support in *Martin* for such claimed element. The Patent Office relies on *Yamazaki* merely for the disclosure of a magnetic attachment fixture that sandwiches a substrate and a mask. See, Office Action, page 4, lines 9-10. Nowhere does *Yamazaki* teach or suggest an alignment mechanism. Thus, even if combinable, the cited references fail to disclose or even suggest a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask, wherein the second alignment mechanism is provided to connect the first formation unit and the second formation unit in series in accordance with the present claims.

In response to Applicants' arguments, the Patent Office asserts that *Edwards* teaches aligning two transportation chambers, and *Martin* teaches aligning a mask to a substrate "at each deposition area." See, Office Action, page 6, lines 11-14. The Patent Office then asserts that "[t]hus, Edwards et al and Martin teach two processing tools connected by an alignment chamber that allows a substrate to be treated in a first processing chamber with a first process and transferred via an alignment chamber to a second processing chamber for a second process, and that the mask can be changed and aligned for each process." See, Office Action, page 6, lines 14-18. However, contrary to the Patent Office's assertion, *Martin* merely teaches aligning a mask to a substrate at a single deposition area and fails to disclose multiple film formation units or deposition areas and aligning a mask to a substrate at each deposition area. See, *Martin*, column 3, lines 7-26; column 4, lines 18-52. Thus, *Martin* fails to suggest multiple processing chambers in which a substrate is treated. Furthermore, as discussed previously, *Edwards* merely discloses aligning modules of a semiconductor wafer processing apparatus, rather than substrate processing chambers which include a mask and a substrate. See, *Edwards*, column 6, lines 40-42. Therefore, *Edwards* fails to teach an alignment chamber which connects substrate processing chambers. As such, even if combinable, *Edwards* and *Martin* fail to teach treating a substrate in a first processing chamber and transferring the substrate to a second process chamber via an alignment chamber.

Applicants further submit that the combination of references proposed by the Patent Office appears to be improper hindsight reconstruction of the present claims. The Federal Circuit has held that it is "impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch*, 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992). "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). The Patent Office merely concludes that because *Edwards* teaches connecting two modules with an aligner and *Martin* teaches aligning a mask with a substrate, one skilled in the art would necessarily be motivated to include an alignment chamber which aligns a mask and a substrate between the first and second film formation units of *Yonemitsu*. See, Office Action, page 4, lines 1-8 and 13-20. However, these types of conclusory statements are exactly the type of hindsight reconstruction the Federal Circuit seeks to avoid.

Contrary to the Patent Office's assertions, one of ordinary skill in the art would not reasonably combine the alignment mechanism of *Martin* with the "aligner" of *Edwards* because *Edwards* merely discloses aligning modules of a semiconductor wafer processing apparatus and fails to disclose the use of an aligner to align a mask with a substrate. See, *Edwards*, column 6, lines 40-42. In contrast, *Martin* is entirely directed to an alignment mechanism for aligning a deposition mask with a substrate. See, *Martin*, Title; Abstract; column 2, lines 46-54. Similarly, one of ordinary skill in the art would have no reason to combine the aligner of *Edwards* with the reaction chambers of *Yonemitsu* to enable a substrate to be passed between film formation units, because *Edwards* merely teaches using its aligner to align transport modules used in semiconductor wafer processing, rather than aligning a mask with a substrate.

With respect to Claim 26, Applicants respectfully submit that, even if combinable, the cited references fail to disclose or suggest that each of the vacuum processing chambers includes a fixture holder for holding the attachment fixture. The Patent Office asserts that *Yonemitsu* discloses a vacuum chamber having a holder 75 for holding the attachment fixture. See, Office Action, page 3, lines 11-12. However, contrary to the Patent Office's assertion, the reference number 75 of *Yonemitsu* is merely a wafer boat for holding a semiconductor wafer. See, *Yonemitsu*, column 11, lines 28-32. Nowhere does *Yonemitsu* teach or suggest that its wafer boat 75 includes a holder for an attachment fixture which attaches a mask and a substrate. In fact, as discussed previously, *Yonemitsu* fails to even mention the use of a mask. The Patent Office relies on *Edwards* and *Martin* merely for the disclosure of alignment mechanisms. See, Office Action, page 4, lines 1-8 and 13-20. The Patent Office relies on *Yamazaki* merely as support for a magnetic attachment fixture which sandwiches a mask and a substrate. See, Office Action, page 4, lines 9-10. Nowhere do *Edwards*, *Martin* or *Yamazaki* teach or even suggest a fixture holder which holds an attachment fixture for attaching a mask and a substrate, nor does the Patent Office cite support for such claimed element. Therefore, even if combinable, the cited references fail to disclose each and every element of Claim 26.

Accordingly, Applicants respectfully request that the rejection of Claims 11, 14-16, 18-21 and 26 under 35 U.S.C. §103(a) to *Yonemitsu*, *Edwards*, *Martin* and *Yamazaki* be withdrawn.

Applicants respectfully note that the Patent Office failed to include Claim 25 in its 35 U.S.C. §103(a) rejection. However, for at least substantially the same reasons discussed above, Applicants respectfully submit that, even if combinable, the cited references fail to disclose each and every element of Claim 25.

In the Office Action, the Patent Office withdrew Claims 27-31 as being directed to a non-elected invention. See, Office Action, page 2, lines 15-16. Specifically, the Patent Office asserts that the detailed structural limitations of Claims 27-31 would require a completely different search and prosecution from the current claims, which only recite a general layout with minimal structure and “do[] not claim a fixture loading chamber or the detailed alignment mechanism.” See, Office Action, page 2, lines 4-12. In response, Applicants respectfully note that the M.P.E.P. expressly states that the standard for determining whether newly added claims should be withdrawn is whether they are directed to *a different invention*:

The claims originally presented and acted upon by the Office on their merits determine the invention elected by an applicant in the application, and in any request for continued examination (RCE) which has been filed for the application. Subsequently presented claims *to an invention other than that acted upon* should be treated as provided in MPEP § 821.03 [requiring restriction of the claims to the originally claimed invention].

See, M.P.E.P. §818.08(a) (2010) (emphasis added).

Applicants respectfully submit that Claims 27-31 are not directed to a different invention than Claims 11, 14-16, 18-21 and 25-26. Contrary to the Patent Office’s assertion, at least Claims 15-16, 19-20 and 25-26 recite detailed structural limitations, rather than a “general layout with minimal structure.” For example, Claims 15-16 recite an attachment fixture for attaching a mask and a substrate, as well as the detailed structure of the attachment fixture. Similarly, Claims 19 recites detailed structural limitations for the first and second alignment mechanisms. Claims 25-26 include detailed structural limitations for the plurality of vacuum processing chambers. Moreover, although Claim 27 recites a fixture loading chamber, current Claim 20 specifically recites “a loading unit including a plurality of vacuum processing chambers, wherein the loading unit is connected in series with the first formation unit by a transfer chamber.” As such, Claims 27-31 should not require any further search or prosecution than the current claims.

Accordingly, Applicants respectfully request that Claims 27-31 be examined on their merits.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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